Title Holder	Territory Iron Pty Ltd
Operator	Territory Iron Pty Ltd
Tenement Manager / Agent	Australian Mining & Exploration Titles Services Pty Ltd  (AMETS) Darwin Office
Titles / Tenements	EL29564
Mine / Project Details	Frances Creek North
Reporting Title	Frances Creek North EL29564 – Annual Report 4 <sup>th</sup> March 2013 to 3 <sup>rd</sup> March 2014
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Company Reference Number	
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Datum / Zone	GDA94 / Zone 52
250k Mapsheet	Pine Creek SD52-08
100k Mapsheet	McKinlay River SD5271
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# **TERRITORY IRON PTY LTD**

A.C.N. 125 984 401

# FRANCES CREEK NORTH

# EL29564

# ANNUAL EXPLORATION REPORT FOR THE PERIOD

4<sup>th</sup> MARCH 2013 TO 3<sup>rd</sup> MARCH 2014

Pine Creek SD52-08 1:250,000 Sheet McKinlay River 5271 1:100, 000 Sheet NORTHERN TERRITORY

## **SUMMARY**

The following report describes work completed on tenement EL29564 by Territory Iron Pty Ltd from 4<sup>th</sup> March 2013 to 3<sup>rd</sup> March 2014. The activities on EL29564 during the reporting year consisted of the following:

An airborne electromagnetic survey was flown over part of the Frances Creek Project area (including part of EL29564) to assist in mapping the structure of the host stratigraphy of the Frances Creek mineralisation. This survey was flown by GPX Surveys using their proprietary XTEM electromagnetic system during August and September 2013.

Reconnaissance visits were conducted during the reporting period to the tenement. Iron enrichment was encountered in the Mt Bonnie Formation, Gerowie Tuff, and possibly the Koolpin Formation. A total of eight (8) rock-chip samples were collected.

Total expenditure for the 2013-14 reporting year was \$29,580.

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Í "Territory Iron Pty Ltd 2014

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# **APPENDICES**

Appendix 1: NT DME text files (includes Verification List)
Appendix 2: Airborne EM Data (ASEG format, on separate disc)

#### 1. INTRODUCTION

This report details exploration activities conducted by Territory Iron Pty Ltd during the period 4<sup>th</sup> March 2013 to 3<sup>rd</sup> March 2014 on exploration tenement EL29564. The location of the tenement is shown below (*Figure 1*).

#### 2. LOCATION AND ACCESS

EL29564 is located approximately 40km due north of the old Frances Creek iron ore mining district from which about six million tonnes was produced during the period 1967 to 1974. The mining district lies 23km north of the township of Pine Creek which is located on the Stuart Highway about 220km south of Darwin. Access from Pine Creek is along the sealed Kakadu Highway for about 3km and then along the Mary River station road for 25km into the southern end of the Mine tenements. Exploration tracks then connect the Mine to exploration tenure to the north (Figure 2).

# 3. TENURE

#### 3.1 MINERAL RIGHTS

Territory Iron Pty Ltd applied for tenement EL29564 on 25<sup>th</sup> June 2012. Following native title, landholder notification, and advertising, the tenement was granted on 4<sup>th</sup> March 2013 for a term of 6 years to 3<sup>rd</sup> March 2018. The tenement consists of 6 square blocks (15.69 sq km). Territory Iron holds 100% of the mineral rights.

#### 3.2 LAND TENURE

Land tenure under the title includes parts of:

Ban Ban Springs Pastoral Lease, PPL 1111 – NT Portion 695, owned by Ban Ban Springs
 Station Pty Ltd, PO Box 7207, St Kilda Road, Melbourne, Vic 8004.

#### 3.3 ABORIGINAL HERITAGE SURVEY AND NATIVE TITLE

Registered native title claims are in place over the pastoral lease:

• DC01/21 (Paddy Huddleston & Ors) – PPL 1111

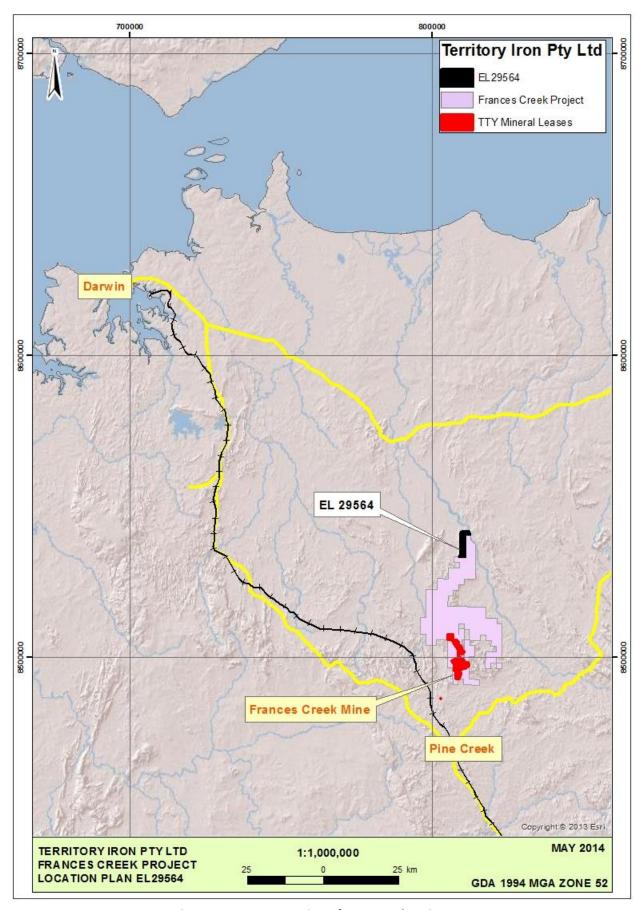


Figure 1: EL29564 Overview of tenement location

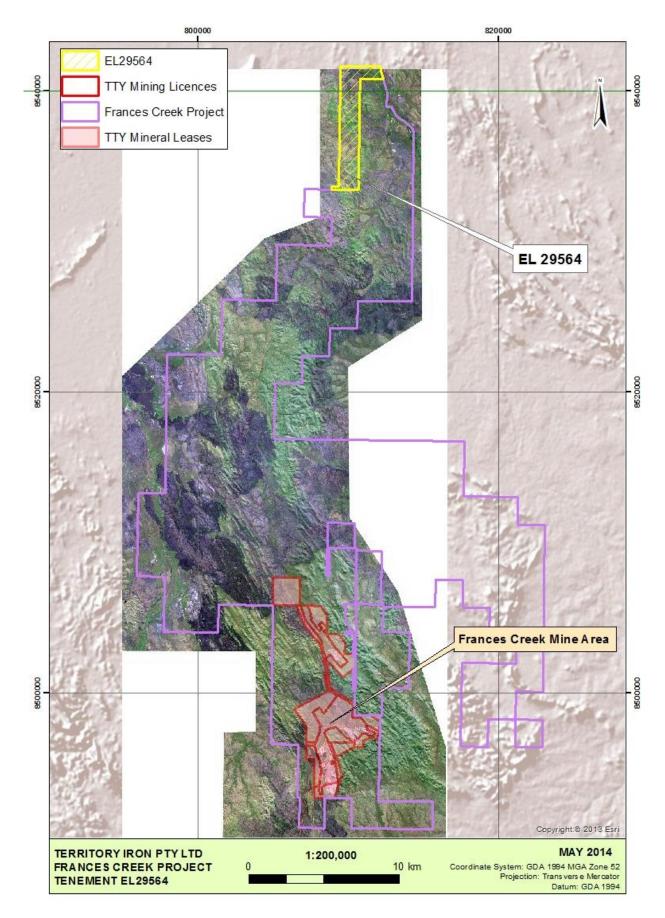


Figure 2: EL29564 Tenement Location over aerial photography

## 4. DISTRICT GEOLOGY & MINERALISATION

The Frances Creek tenement group provides a cross section of the Early Proterozoic sedimentary stratigraphy of the Pine Creek Geosyncline. The eastern most tenements cover sedimentary rocks of the Namoona and Mt Partridge Groups; the central tenements cover sedimentary rocks of the South Alligator and Mt Partridge Groups, including the iron-prospective Lower Wildman Siltstone, whilst the western tenements cover sediments of the Finnis River and South Alligator Groups. The sediments are complexly folded in a NNW trend. Conformable sills of Early Proterozoic Zamu Dolerite are folded with the sediments. Cretaceous quartz-pebble conglomeritic sandstone forms remnant plateaus over the central tenement area.

Exploration Licence 29564 is situated in the Lower Proterozoic Pine Creek Geosyncline, the geology of which is indicated on the McKinlay River 1:100000 Geological Series map sheet, and explanation by Stuart-Smith et al, 1986. The Lower Proterozoic succession was intruded by conformable dolerite sills during a period of major deformation associated with regional metamorphism and the intrusion of A-type granites.

The tenement is located adjacent to the old Mount Harris battery which serviced the Mount Harris tin field. The geological sequence in the Mount Harris area consists of Lower Proterozoic rocks that have been metamorphosed to greenschist facies assemblages and which belong to the Mount Partridge Group and South Alligator Group. Individual members and formations are tightly folded into a series of NNW striking anticlines and synclines that plunge shallowly to the NNW and away from the Cullen Granite located south of the metasedimentary package.

Exposed sequences within Exploration Licence 29564 include a member of the Mount Partridge Group, the Wildman Siltstone. Metasediments of the Koolpin Formation, the lowermost formation within the South Alligator Group, unconformably overlies the Mount Partridge Group and is in turn conformably overlain by the Gerowie Tuff member. Sills of the Zamu Dolerite are recorded at the Mount Partridge Group – South Alligator Group unconformity. The Cullen Granite intrudes the strata south of the tenement area.

The geological setting within EL29564 consists of a broad NNW plunging syncline, the core of which is comprised of South Alligator Group units enclosed by Wildman Siltstone ridges that parallel the fold axis. Mundogie Sandstone defines the fold closure within the southern block of the tenement.

Parasitic folding and shearing are reportedly associated with the fold nose. Haematitic ironstone lenses are also reported.

Previous mining in the Mt Masson area focussed primarily on Sn mineralisation and various exploration ventures considered potential for uranium, gold and base metals. Exploration efforts located and sampled ironstone lenses in Wildman Siltstone and Koolpin Formation strata but were obviously concerned with precious metal and base metal content of these outcrops.

Tin mineralisation hosted by fractured Mundogie Sandstone located adjacent to and within the contact metamorphic aureole of the Cullen Granite was mined at Mt Masson, Mt George and Mt Harris, whereas at Jessops, mineralisation is associated with Wildman Siltstone lithologies. At some locations quartz – cassiterite veins March also contain anomalous quantities of Au, Ag, Pb, Zn and Bi, thus leading earlier explorationists to consider Mount Partridge Group stratigraphy for precious metal and base metal potential.

Territory Iron Pty Ltd view EL29564 as prospective for high grade haematite mineralisation. Several references are made by previous explorers to haematite lenses within the Wildman Siltstone.

## 5. EXPLORATION ACTIVITIES - Year 1

#### 5.1 Reconnaissance Field Visits / Rock-chip Sampling

Territory Iron Exploration personnel undertook reconnaissance visits within the reporting period to the tenement to ground truth the area and conduct a preliminary mapping / rock-chip sampling programs.

Iron mineralisation was encountered as iron-enriched siltstone and found to occur in the Mt Bonnie Formation, and possibly the Koolpin Formation also. Ironstone / siltstone breccia with some enriched goethite was located within the Gerowie Tuff. Samples were also taken from quartz outcrops where sulphides were present.

A total of eitght (8) rock-chip samples were collected during the reporting period. A map of rockchip sampling locations is shown in Figure 3, and the data is located in Appendix 1 under NT DME text files.

#### 5.2 Airborne EM Survey

An airborne electromagnetic survey was flown over part of the Frances Creek Project area to assist in mapping the structure of the host stratigraphy of the Frances Creek mineralisation. This survey was flown by GPX Surveys using their proprietary XTEM electromagnetic system during August and September 2013 as Job Number 2511. The area that was flown over part of EL29564 is shown in Figure 3.

Flying specification used for the survey was:

Line spacing: 100mFlying direction: 90 – 270

• Survey size: 848 km

• Coordinate datum: GDA94 MGA Zone 52

XTEM equipment specifications were:

Nominal EM array height: 35 m

• Array configuration: In-loop

Waveform: 25% duty cycle square wave, 25 Hz

Tx loop size: 340m2

• Effective Rx area: 10,000m2

Sampling interval: ~10m

• Magnetometer: Geometrics G822A Cesium vapour

Nominal sensor height: 35 m

• Sampling interval: 1-2m

EM data was field checked, field processed to reduce the effects of birdswing, parallax, reverse negative decays, spline to a uniform data spacing and smoothed using a Butterworth filter.

The cleaned EM data was conductivity-depth inverted (CDI) to produce depth sections using the both the EMFlow modelling code distributed by Emcom and the EMaxAIR algorithm developed by Fullagar Geophysics. Depth slices were extracted from the inversion products at ten metre intervals ranging from 10m to 160m. Area with a null CDI modelled response are shown as grey in the depth slice imagery. An image of the 30m depth slice generated from the inversion of the EM data is shown in Figure 4.

Magnetic data were collected at a 50 Hz sampling frequency but was averaged down to 25 Hz to minimise the effect of the EM system on the magnetic field measurements. Magnetic data from this survey were not used for interpretation as a more detailed magnetic survey had been previously collected over the Frances Creek Project area.

The survey files are in ASEG format and are located along with the contractors report in Appendix 2.

Hawke Geophysics has been contracted to complete a Geophysical report using both the recent ground gravity and airborne EM datasets. At the time of writing this report, the Geophysical report was not completed. It will be included in the 2014-15 Annual Report for EL29564.

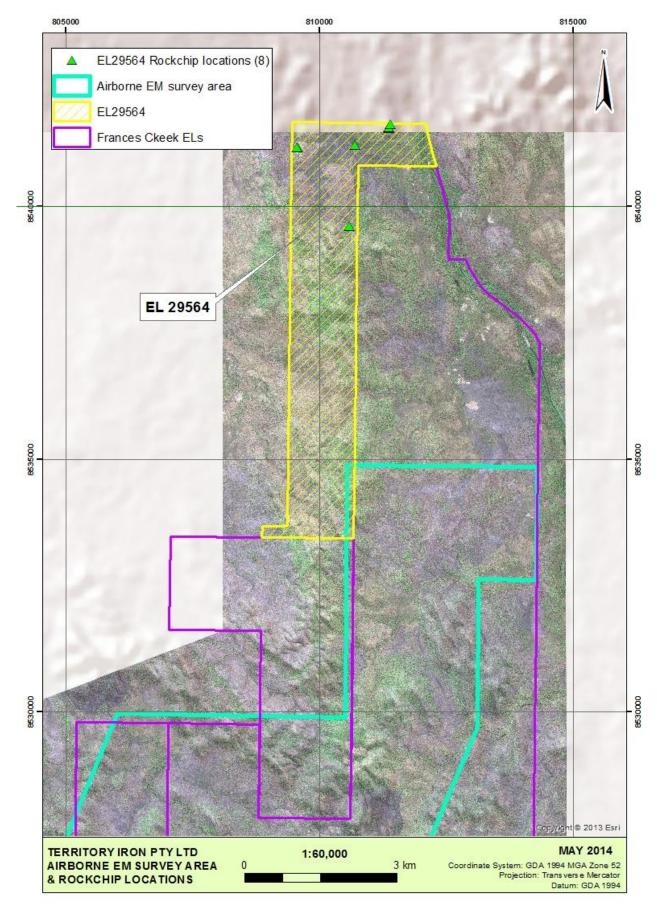


Figure 3: Airborne EM survey area (aqua polygon) and rock-chip locations in EL29564

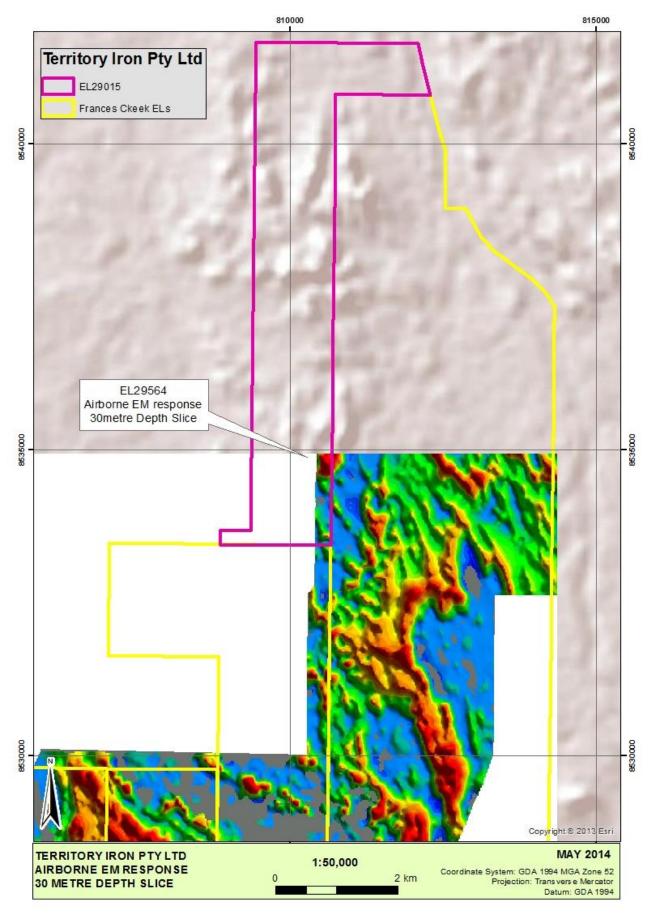


Figure 4:Airborne EM response over Frances Creek, 30 metre depth slice

#### 6. EXPLORATION EXPENDITURE

Exploration expenditure for the reporting period is \$29,580.

## 7. CONCLUSIONS & RECOMMENDATIONS

Territory Iron concludes that there is potential for the discovery of economic haematite mineralisation within tenement EL29564. It is recommended to undertake follow-up detailed exploration activities within EL29564 based on the findings from the reconnaissance visit and the airborne EM survey.

Territory Iron is planning to undertake follow-up detailed exploration activities within EL29564 for the 2014-2015 reporting period based on this year's results. This work consists of:

- Systematic reconnaissance of the Wildman Siltstone sequences to locate and sample all ironstone lenses within the tenement. This includes geological mapping and rock-chip sampling of indentified haematite outcrops.
- Drillhole design for subsequent first pass Aircore (AC) drilling (pending successful field visits)

# **APPENDIX 1:**

NT DME text files (includes Verification List)

# **APPENDIX 2:**

Airborne EM Data (ASEG format, on separate disc)